



Developing an Army Water Security Strategy

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AEPI's Interest in an Army Water Security Strategy

- Outgrowth of AEPI's groundbreaking work on sustainability
- Integrate different analytical perspectives
- Holistic and long-term opportunities
- Actionable recommendations



Army Water Security Strategy: Motivators

Institutional / Training

- Future imbalances between supply and demand
- Uncertainties concerning future availability, quality, and cost
- Uncertainties related to climate change and demography
- Renewable energy increases water demands
- More realistic training scenarios to match deployment water situation

Operations

- Vulnerabilities associated with extended use of bottled water
- Use of integrated watershed management
- Uncertain duration makes optimal choice for water delivery less clear
- Complex interagency and international coordination requirements
- Integration of Army civil works expertise

Supply Chain

- Spatial and temporal risk associated with embedded water
- Use Army market power to increase sustainability of suppliers



Linkages with Leadership Initiatives

Institutional

- Net Zero Installations Initiative
- Army Campaign Plan
- Army Sustainability Campaign Plan

Net Zero Hierarchy



Operations

- Army Contingency Basing Strategy & Campaign Plan
- Army Base Camp ICDT
- Army Campaign Plan



TRADOC Pamphlet 525-7-7

The United States Army
Concept Capability Plan
for
**Army Base Camps
in
Full Spectrum Operation**
for the
Future Modular
Force
2015-2024

07 December 2009



Supply Chain

- Green Procurement
- Fully –burdened cost of fuel and water

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Contingency Basing Strategy

Xxx XX, 2010



Strategic Imperatives

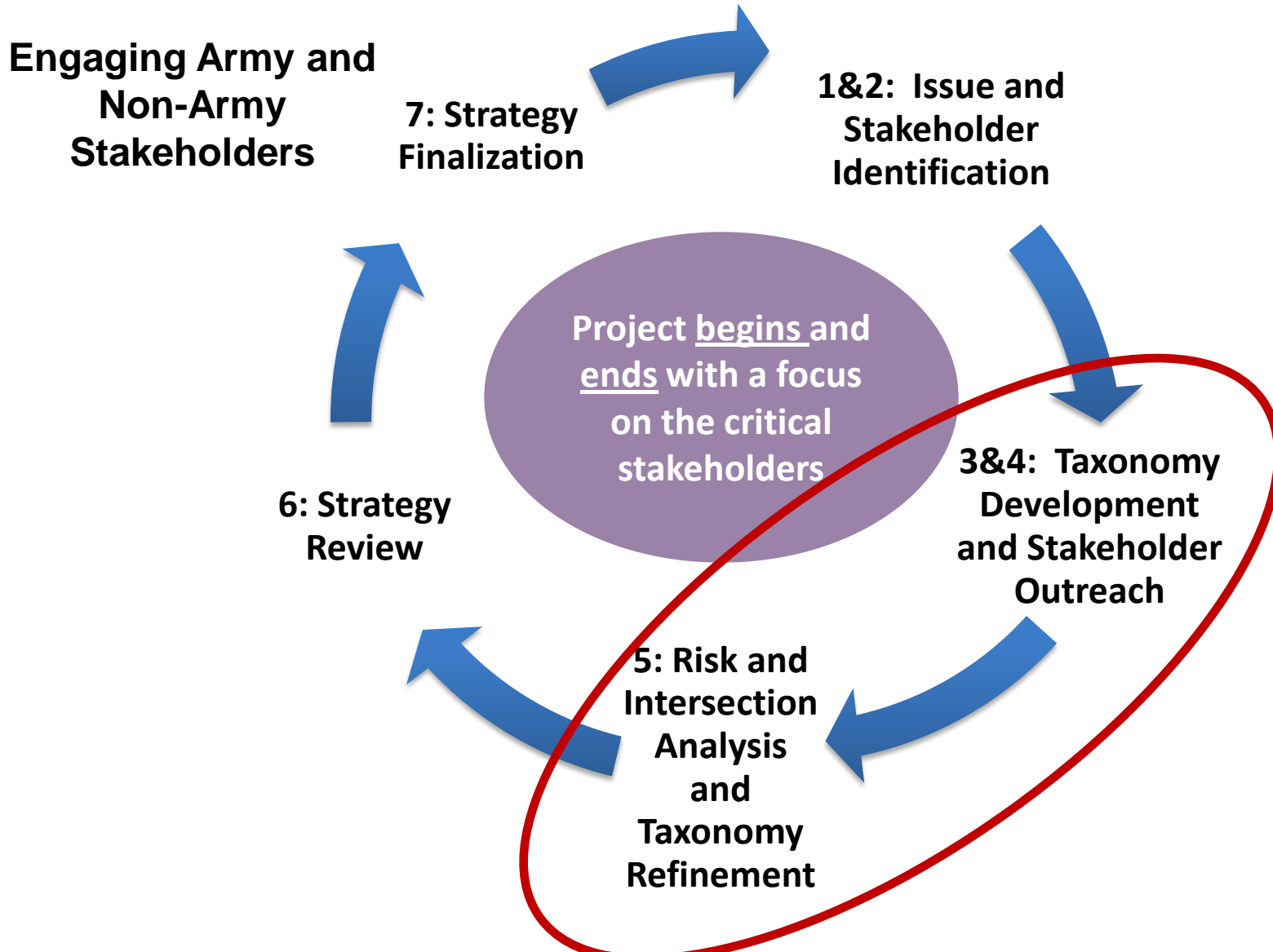
- Develop Army policy for Contingency Bases.
- Synchronize efforts regarding Contingency Bases within the Army.
- Optimize capabilities for Contingency Bases.
- Integrate strategic planning for Contingency Bases jointly.



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Marstel-Day's Methods





Defining Water Security

The capacity to ensure that water of suitable quality is provided at a sustained rate sufficient to support all current and future Army missions as needed.

Army water security should

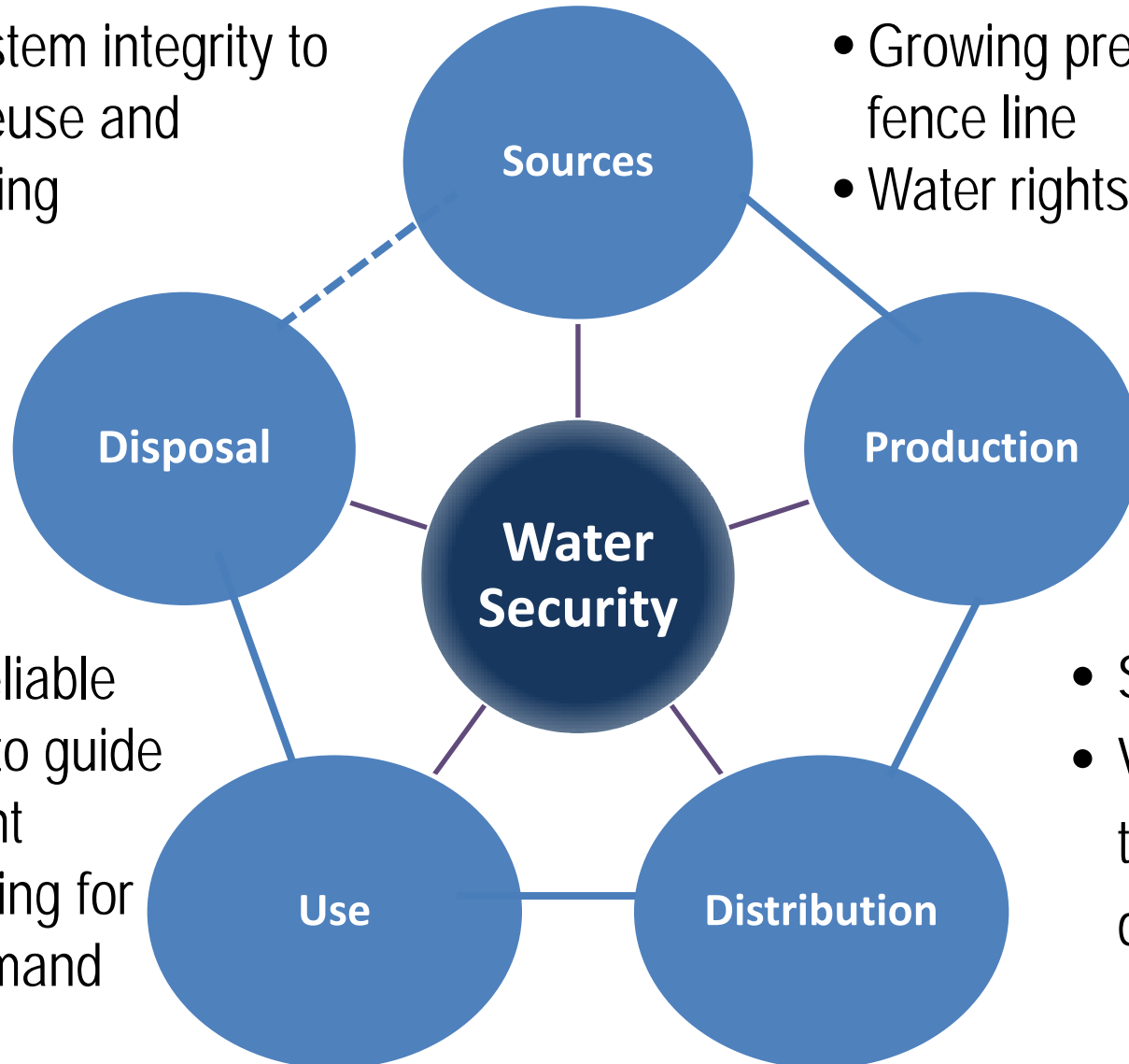
- include deliberate efforts to minimize direct costs
- minimize associated energy and transportation costs
- mitigate occupational and combat-related risks
- avoid damage to the environment (at home and in host nations)
- ensure long-term, sustainable access
- engage other users of shared water resources to plan for future water needs



Water-Related Vulnerabilities for Army Installations

- Need system integrity to secure reuse and repurposing

- Growing pressures outside fence line
- Water rights questions



- Lack of reliable use data to guide investment
- Not planning for future demand

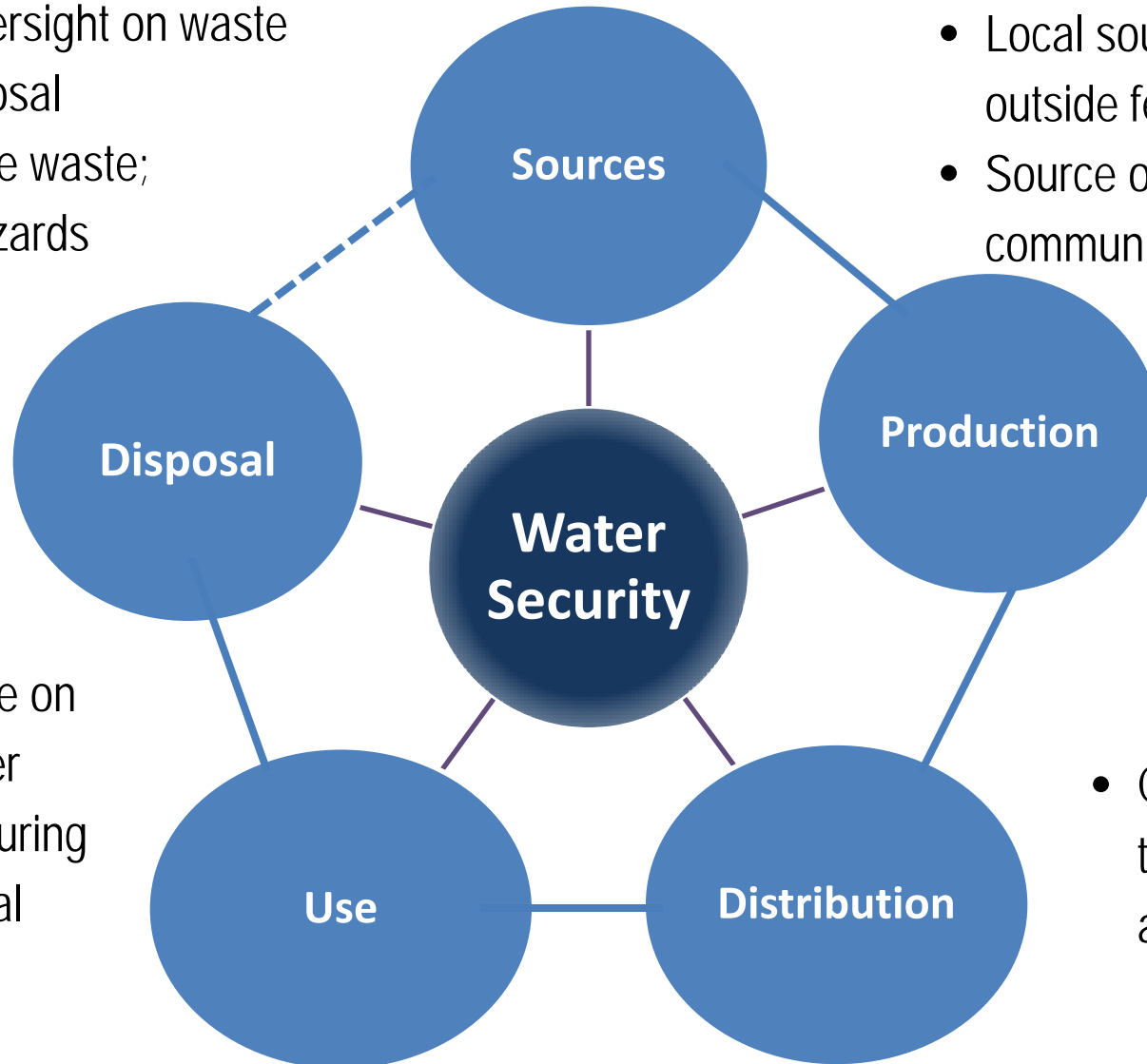
- System integrity
- Vulnerabilities to natural disaster/attack



Water Resource Vulnerabilities in Army Overseas Operations

- Lack of oversight on waste water disposal
- Water bottle waste; volume/hazards

- Local source unavailable or outside fence line
- Source of friction with local community



- Dependence on bottled water
- Hydration during bio/chemical event

- Costs and risks of transporting bottled and bulk water



Intersection with Other Resources



Energy / Power Generation

- **Water intensive:** Fuel production (conventional, renewable, biofuels) and power generation
- **Energy intensive:** Pumping, treating, and transporting water; desalinization



Agriculture/Environment/Ecosystem Services Resources

- **Increased competition:** Agriculture and local communities needs
- **Water quality concerns:** on and off the installation
- **Changing water patterns:** Impacts on raw water source, T&E habitats; challenges to and imperative for preservation of natural infrastructure



Initial General Insights

- Policy is compliance-driven; i.e., how to treat water entering and being discharged from an installation
- Little focus on quality, volume, and sustainability of offbase or shared water sources
- Long-term water projections not used
 - Base Realignment and Closure
 - Stationing
- Embedded water in supply chain; not identified as policy, security, or procurement issues
- Water supply in operations more coordinated and focused



Initial Key Insights: Institutional

- A unified water management program at the Secretariat and installation levels is needed
- Protecting Army water rights is vital
- Quality and type of information collected is questioned
- Municipal utility model may offer approach to comprehensive coordination, planning, management
- Attention to infrastructure tends to be reactive; long-term investment a challenge



Initial Key Insights: Institutional (2)

- Privatization can provide compelling savings and investments in infrastructure, but security issues
- Conservation planning done for compliance; long-term water security planning, as broadly defined here, is not included
- Conservation may not result in water security
- Water security issues not factored into land conservation programs
- Among installation, more action is taken where the water security problems are more severe



Initial Key Insights: Operational

- Institutions, organizations, personnel, and processes dedicated to improving solutions for meeting warfighter water needs
- Key concerns remain
 - Operator skill
 - Packaging and treatment technologies
- Rebuilding and sustaining Army skill sets in key capabilities is necessary
 - Civil engineering design (not just assembly)
 - Well drilling
 - Master planning
 - Integrated water resources management regionally



Initial Key Insights: Operational (2)

- Split Warrant Officer responsibilities into energy and water
- Diverse perspectives on bottled water; requires a hybrid solution
 - Proponents—benefits of soldier hydration; transportability
 - Opponents—focus on waste, life cycle cost, and operational vulnerabilities
- Best practices for contingency bases
 - Siting and planning access to local water sources
 - Leadership preparation (e.g. “Mayoral Cell” concept)
 - High sensitivity to host nation community perceptions / needs



Next Steps

- Translating the key findings into goals and objectives in a draft strategy document
- Circulating draft strategy for review
- Hosting review workshop in summer timeframe
- Finalizing and publishing strategy in fall timeframe



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Questions